

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D 13 SEP 2005

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Applicant's or agent's file reference FP20427	FOR FURTHER ACTION		See Form PCT/IPEA/416
International application No. PCT/AU2004/001304	International filing date (day/month/year) 24 September 2004	Priority date (day/month/year) 26 September 2003	
International Patent Classification (IPC) or national classification and IPC Int. Cl. <sup>7</sup> E03C 1/10, E03D 1/32, F16K 31/30			
Applicant SENSEI TRADING PROPRIETARY LIMITED et al			

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
  - a. ☐ (sent to the applicant and to the International Bureau) a total of sheets, as follows:
    - ☐ sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
    - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
  - b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or table related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

## 4. This report contains indications relating to the following items:

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Box No. I    | Basis of the report   |
| <input type="checkbox"/> Box No. II              | Priority  |
| <input type="checkbox"/> Box No. III             | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability  |
| <input type="checkbox"/> Box No. IV              | Lack of unity of invention  |
| <input checked="" type="checkbox"/> Box No. V    | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> Box No. VI              | Certain documents cited   |
| <input type="checkbox"/> Box No. VII             | Certain defects in the international application  |
| <input checked="" type="checkbox"/> Box No. VIII | Certain observations on the international application   |

Date of submission of the demand 22 April 2005	Date of completion of the report 31 August 2005
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# INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/AU2004/001304

## Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on translations from the original language into the following language which is the language of a translation furnished for the purposes of:

☐ international search (under Rules 12.3 and 23.1 (b))

☐ publication of the international application (under Rule 12.4)

☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

☒ the international application as originally filed/furnished

☐ the description:

pages as originally filed/furnished

pages\* received by this Authority on with the letter of

pages\* received by this Authority on with the letter of

☐ the claims:

pages as originally filed/furnished

pages\* as amended (together with any statement) under Article 19

pages\* received by this Authority on with the letter of

pages\* received by this Authority on with the letter of

☐ the drawings:

pages as originally filed/furnished

pages\* received by this Authority on with the letter of

pages\* received by this Authority on with the letter of

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages

☐ the claims, Nos.

☐ the drawings, sheets/figs

☐ the sequence listing (*specify*):

☐ any table(s) related to the sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

☐ the description, pages

☐ the claims, Nos.

☐ the drawings, sheets/figs

☐ the sequence listing (*specify*):

☐ any table(s) related to the sequence listing (*specify*):

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/AU2004/001304

**Box No. V** Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. Statement

Novelty (N)	Claims 20, 22	YES
	Claims 1-19, 21	NO
Inventive step (IS)	Claims 22	YES
	Claims 1-21	NO
Industrial applicability (IA)	Claims 1-22	YES
	Claims	NO

## 2. Citations and explanations (Rule 70.7)

D1: US 3970101 A

D2: US 2766769 A

D3: US 5551466 A

D4: US 5836346 A

D5: GB 742391 A

D6: US 1279468 A

NOVELTY Claim 1-19, 21:

1. Claim 1 - Each of the above citations D1-D3 disclose all the features of claim 1. In particular:
  - 1.1. Inlet valve: D1 fig. 1, item 10; D2 fig. 1; D3 fig. 3
  - 1.2. comprising a valve body: D1 fig. 1, conduit (26); D2 fig. 1, valve stem guide (3); D3 fig. 3, annulus (121)
  - 1.3. and a movable valve element: D1 fig. 1, actuator member (64); D2 fig. 1, valve stem (4); D3 fig. 3, spindle (117)
  - 1.4. having a clearance portion between the movable element and the valve body: D1 fig. 1, the space between the conduit (26) and the actuator member (64) communicating with the atmosphere through holes (79) or alternatively, the space between the fins (76) of actuator (64) and the conduit (26); D2 fig. 1, the clearance provided by the annular channel (46), communicating with the atmosphere through outlet opening (33) and pipe (37); D3 fig. 3, the space between the spindle (117) and annulus (121), communicating with the atmosphere through popper (125 see also figure 4)
  - 1.5. causing a gas gap to prevent unwanted flow of liquid from the vessel into the supply line when the valve is closed: D1 column 3, lines 38-55; D2 column 3, lines 51-60; D3 column 4, lines 46-61
2. Claim 2 - The vessel is a cistern of a toilet: D2 and D3 are directed to a toilet cistern - eg. see D2 claim 1; D3 column 1 line 5-10
3. Claims 3, 16 - The valve has adjustable height: D1 bracket (93) provides a series of holes to which housing (14) of valve (10) can be attached at adjustable height
4. Claims 4-8 - The features of these claims are readily apparent in the figures of D1-D3

Continued in Supplemental Box

**Box No. VIII Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

1. Claim 3 is not clear – the it defines a new feature of the valve (adjustable support member) but does not state that this feature is to be incorporated
2. Many of the claims lack clarity due to lack of antecedent:
  - a) Claims 3, 16, 17 are each appended to “any preceding claim” however each refer to “the cistern” which is only introduced at claim 2
  - b) Claim 5 is appended to “any preceding claim” however “the elongate member” is only introduced at claim 4
  - c) Claim 7 is appended to “any preceding claim” however “the sealing end” is only introduced at claim 6
  - d) Claim 12 lacks an antecedent to “the plunger”
  - e) Claim 15 is appended to “any preceding claim” however “the plunger guide housing or shroud” is only introduced at claim 14
  - f) Claim 18 is appended to “any preceding claim” however “the element responsive to changes in water level” is only introduced at claim 17
  - g) Claim 20 lacks an antecedent to “the float”
3. Claim 15 is not clear for the additional reasons:
  - a) The phrase “clearance between the plunger” does not make sense
  - b) It would seem that the “reduced bore portion” should in fact be an *increased* bore portion if it is to provide a clearance.

## Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: **BOX V**

5. Claim 9 – Clearance portion is located on the movable element: D1 the clearance portion can be considered the reduced diameter of the actuator element (64), or alternatively, the gaps between the fins (76) of actuator (64); D2 the central annular channel (46); D3 the looseness of fit of the spindle (117) in the annulus (121)
6. Claims 10-12 – The clearance portion is a reduced diameter portion of the movable element located centrally or towards one end of the movable element on the outside surface: D1 the reduced diameter of actuator member (64); D2 the reduced diameter (annular channel 46) of valve stem (4)
7. Claim 13 – The clearance portion is continuous or segmented: D1 has both types of clearance portion (the reduced diameter of the actuator member (64) and the clearance of the fins (76); D2, D3 have continuous clearance portions
8. Claim 14 – A plunger guide housing: D1 fig. 1, conduit (26); D2 fig. 1, valve stem guide (3); D3 fig. 3, crown (123)
9. Claim 15 – The plunger guide housing has an aperture etc: D1 holes (79); D2 outlet opening (33); D3 popper bore (125)
10. Claims 17-19 – The features of these claims are readily apparent in the figures of D1-D3
11. Claim 21 – See comments in 1.5 above

INVENTIVE STEP Claims 1-21:

12. Claim 1-19, 21 as above
13. Claim 2 lacks an inventive step in the light of D1: The use of valve (10) in a toilet cistern would be obvious.
14. Claims 3, 16 lack an inventive step in the light of D2 or D3 in combination with D4: It would be obvious to combine the valve of D2 or D3 with the adjustable riser for a cistern inlet valve disclosed in D4. Such an adjustable feature could readily be applied to the risers of D2 or D3 and it would be obvious to a skilled worker to do so in order to solve the problem of making the valve height adjustable.
15. Claim 20 lacks an inventive step in the light of D2 in combination with D5: D5 discloses a linkage for a float of a cistern so that the float has a snap action to abruptly close the valve. A skilled worker would readily combine these two documents to solve the problem of a more abrupt closure of the valve.

NOTE that D6 is considered to be merely related art. Referring to D6, figure 2, The structure of the inlet valve is very similar to that embodied in the present invention, including an air gap (at bore 28) as shown between the plunger (30) and the plunger guide (26). However there is no teaching that the gap is to allow air into the valve in order to prevent siphoning into the supply. Indeed the configuration shown in figure 1 is such that the entire riser will be deeply submerged when the float pivots into position to close the inlet valve. There would be no reason that a skilled worker would consider D6 relevant to solving the problem of preventing siphoning into the supply line.